Reclamation and Reuse Administrative Authorization Fact Sheet

This document gives pertinent information concerning an administrative authorization, associated with existing VPDES discharge permit number VA0088102. The authorization covers the reclamation system and reclaimed water distribution system used to deliver reclaimed water to the end user. The reclamation system, defined as "a treatment works that treats domestic, municipal or industrial wastewater or sewage, to produce reclaimed water for a water reuse that would not otherwise occur" is the existing HRSD King William STP permitted under VA0088102. The intended reuse of the reclaimed water is in the category of Industrial, with a minimum reclaimed water standard requirement of Level 2. This permit action proposes to establish reclaimed water standards, monitoring and reporting requirements, and special conditions for the intended reuse.

1. Facility Name and Address: King William Sewage Treatment Plant
542 Acquinton Church Road
King William, VA 23086

2. VPDES Permit No. VA0088102 Permit Expiration Date: December 31, 2019

3. Owner: Hampton Roads Sanitation District (HRSD)
Contact: Jamie Heisig-Mitchell
Telephone No: (757) 460-4220
Address: 143 Air Rail Avenue, Virginia Beach, VA 23455

4. Application Complete Date: December 21, 2015
Authorization Drafted By: Laura Galli Date: December 21, 2015
DEQ Regional Office: Piedmont
Reviewed By: Brian Wrenn Date: January 12, 2016
Emilee Adamson Date: XXXX
Valerie Rourke Date: XXXX

Public Comment Period: Not Applicable

5. Reuse Details:

Intended Reuse	Manufacturing
Reclaimed Water Treatment	Level 1, provided by existing King William STP, VA0088102
End User	Nestle Purina Cat Litter Facility
Reuse Category	Industrial
Design Flow	Reclamation System: 0.035 MGD King William STP: 0.1 MGD
System Storage (at Reclamation System)	None, the reclaimed water is directly pumped to the end user via dedicated pipe.

See **Attachment A** for facility diagrams.

King William STP is the sole source of reclaimed water provided to its end user, Nestle Purina, at this time. The Service Agreement between King William STP and Nestle Purina is included in the Water Reclamation and Reuse Application Addendum.

Should the addition of new end users or new reuses to the RWM plan require the incorporation of additional or different reclaimed water standards, monitoring requirements or special conditions, a new or modified authorization may be necessary.

6. Standards and Monitoring Basis:

Parameters	Standard	Parameter and Standard Basis	Frequency	Sample Type	Frequency and Sample Type Basis
Reclamation System Flow (MGD)	Monthly average: NL	GM10-2001, Rev. No. 1	Continuous	TIRE	GM10-2001, Rev. No. 1
	Monthly maximum: NL				
Influent Flow (MGD)	Monthly average: NL				
	Monthly maximum: NL				
pH (Standard Units)	6.0 – 9.0	9VAC25-740-70.A.1.d	Daily	Grab	9VAC25-740-80.A.5
E. coli (Colonies per 100 mL)	Monthly Geometric mean: $\leq$ 11	9VAC25-740-70.A.1.b.(2) [1]	4 per Week	Grab	Per 9VAC25-740-80.A.4.a and GM10-2001, Rev. No. 1
	CAT: >35				
$cBOD_5$ (mg/L)	Monthly average: $\leq$ 8	9VAC25-740-70.A.1.e(2) [2]	1 per Week	24 HC	Per 9VAC25-740-80.A.3
Turbidity (NTU)	Daily average: $\leq$ 2.0	9VAC25-740-70.A.1.f	Continuous	Recorded	9VAC25-740-80.A.1
	CAT: > 5.0				

GM10-2001, Rev. No. 1 = DEQ Water Guidance Memo No. 10-2001- Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

[1] In accordance with Guidance Memo No. 10-2001, *E. coli* was chosen as the reclaimed water bacteria standard because King William STP's effluent is limited for *E. coli* rather than Fecal coliform or Enterococci.
[2] In accordance with Guidance Memo No. 10-2001, carbonaceous BOD_5 was chosen as the reclaimed water standard because King William STP's effluent is limited for $cBOD_5$ rather than BOD_5.

7. Special Conditions

B.1. Prohibitions
Basis: 9VAC25-740-50.B.

B.2. Nuisance Conditions
Basis: 9VAC25-740-170.D.

B.3. Reopener
Basis: Permit Writer Judgment

B.4. Stream Gauge Installation
Basis: Permit Writer Judgment based on Cumulative Impact Analysis results.

B.5. Reuse Diversion Monitoring and Restrictions
Basis: Permit Writer Judgment based on Cumulative Impact Analysis results. 9VAC25-740-100.B.6, 9VAC25-740-30.B.2 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Interim Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

B.6. Monitoring Requirement
Basis: 9VAC25-740-80.C states that "A reclamation system that produces reclaimed water intermittently or seasonally shall monitor only when the reclamation system discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse." This also applies to reclamation systems that "produce" reclaimed water throughout the year but discharge only intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.

B.7. Turbidity CAT
Basis: 9VAC25-740-70.C.1.

B.8. *E. coli* CAT
Basis: 9VAC25-740-70.C.2.

B.9. CAT Noncompliance requirements
Basis: 9VAC25-740-70.C.3.

B.10. Turbidity Meter and Disinfection Monitoring Equipment Repair
Basis: 9VAC25-740-80.A.1.

B.11. Operator Requirements
Basis: 9VAC25-740-130.A.

B.12. UV Radiation Requirements
Basis: 9VAC25-740-110.A.2.a, and DEQ Water Guidance Memo No. 10-2001- Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

B.13. O&M Manual
Basis: 9VAC25-740-120.B.3.f, and 9VAC25-740-140.A, D.1, and F; "Ultraviolet Disinfection: Guidelines for Drinking Water and Water Reuse, 2nd Ed." (NWRI, 2003); and DEQ Water Guidance Memo No. 10-2001- Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

B.14. Distribution System Requirements
Basis: 9VAC25-740-110.B.9 and 9VAC25-740-100.C.1.h.

B.15. Design Requirements
Basis: 9VAC25-740-110

B.16. Storage Inventory Requirements
Basis: 9VAC25-740-110.C.15.

B.17. Preliminary Engineering Report
Basis: 9VAC25-740-120.A.

B.18. CTC/CTO
Basis: 9VAC25-740-120.B.1.

B.19. Public Access Controls
Basis: 9VAC25-740-160.A.

B.20. Reuse Area Advisory Signs
Basis: 9VAC25-740-160.B and D.

B.21. Industrial Reusers Advisory Signs
Basis: 9VAC25-740-160.B

B.22. Distribution System Identification
Basis: 9VAC25-740-110.B.8.b

B.23. Treatment Failure Notifications
Basis: 9VAC25-740-100.C.1.f, 9VAC25-740-170.A.2, and 9VAC25-740-200.B.

B.24. Addition of End Users Notification
Basis: 9VAC25-740-100.C.9.

B.25. Reporting Interruption/Loss of Reclaimed Water
Basis: Although 9VAC25-740-200.B requires the interruption or loss of reclaimed water supply to be reported, specific information to be reported for such an occurrence is based on DEQ Water Guidance Memo No. 10-2001 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

B.26. Records Retention
Basis: 9VAC25-740-190.A and B.

B.27. Annual Report
Basis: 9VAC25-740-200.C and 9VAC25-740-170.A.2.

B.28. Reclaimed Water Management Plan
Basis: 9VAC25-740-100.C.9 and DEQ Water Guidance Memo No. 10-2001, Revision No. 1 – Interim Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

B.29. Notification of Untreated or Partially Treated Discharge
Basis: 9VAC25-740-200.B, DEQ Water Guidance Memo No. 10-2001 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq. and the VPDES Permit Regulation, 9VAC25-31-20 et seq.

B.30. Leak and Main Break Reporting
Basis: DEQ Water Guidance Memo No. 10-2001 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq., and the VPDES Permit Regulation, 9VAC25-31-10 et seq.

B.31. Contract or Service Agreement Requirements
Basis: Permit Writer Judgment and 9VAC25-740-40.C. This is a custom condition not included in GM10-2001.

8. Staff Comments

- VDH-ODW was sent a copy of the application addendum on December 21, 2015 in accordance with agency guidance recommending coordination. The VDH response dated XXXX, 2015 stated no objection to the project. See **Attachment B** for the VDH response letter.
- In accordance with agency guidance, carbonaceous BOD_5 was chosen as the reclaimed water standard because King William STP's effluent is limited for $cBOD_5$ rather than BOD_5.
- *E. Coli* was selected as the bacteria parameter for the reclaimed water standards. Per the draft guidance, the bacteria parameter should correspond to the bacterial monitoring parameter for an effluent point source discharge to the nearest surface water. The intent of the guidance is to simplify sampling in cases where a facility has both discharge limitations and reclaimed water standards. Because King William STP discharge permit contains an *E. Coli* limitation, *E. Coli* is the appropriate parameter to apply in the reclaimed water standards.
- Monitoring of the Reclaimed Water Distribution System is not necessary. The point of compliance with reclaimed water standards is just prior to distribution to the transmission line. Therefore, directly after reclaimed water has demonstrated compliance with the standards, it enters the distribution system dedicated pipe and is not vulnerable to exterior contamination. All reject water is returned to the King William STP treatment works via sanitary sewer system such that contamination is of no consequence to the system, public health or the environment.
- King William STP does not have a history of significant noncompliance.

- As a result of the Cumulative Impact Analysis performed by DEQ Central Office (see **Attachment C**) two special conditions, B.4 and B.5, were added to the administrative authorization. The scope of these special conditions is to ensure that the diversion of the reclaimed water from the discharge to Moncuin creek to the end user will not adversely impact the water supply availability at the downstream intake at Pampatike Hill Farm.

8. Attachments

Attachment A: Facility Diagrams for the Reclamation and Reuse Distribution System
Attachment B: VDH Coordination Response
Attachment C: Cumulative Impact Analysis

Attachment A

Facility Diagrams for the Reclamation System and Distribution System

Attachment B

VDH-ODW Coordination Response

Attachment C

Cumulative Impact Analysis